

**IN THE CLAIMS:**

The text of all pending claims, (including withdrawn claims) is set forth below. Canceled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (canceled), (withdrawn), (new), (previously presented), or (not entered).

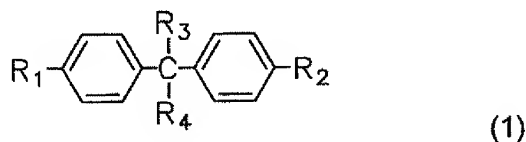
Please CANCEL claims 3 and 22 - 48 and AMEND claims 1, 2, 4 and 21 in accordance with the following:

1. (CURRENTLY AMENDED) A non-aqueous electrolyte of a lithium secondary battery, comprising:

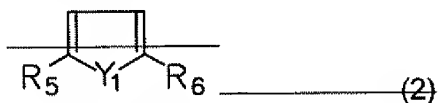
a lithium salt;

an organic solvent; and

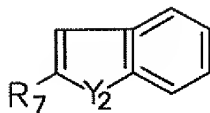
at least one additive compound substantially in an amount of 0.01 to 10 wt%, based on a total weight of electrolyte and selected from the group consisting of compounds represented by the following formulas ~~(1) to (3) and (6)~~ (1), (3) and (6):



where R<sub>1</sub> and R<sub>2</sub> are independently selected from the group consisting of a hydroxy, a C<sub>1</sub> to C<sub>6</sub> alkoxy, a C<sub>2</sub> to C<sub>6</sub> alkenyl, a C<sub>1</sub> to C<sub>6</sub> alkoxy substituted with a halogen, and a C<sub>2</sub> to C<sub>6</sub> alkenyl substituted with a halogen; and R<sub>3</sub> and R<sub>4</sub> are independently selected from the group consisting of a C<sub>1</sub> to C<sub>6</sub> alkyl and a C<sub>6</sub> to C<sub>12</sub> aryl;

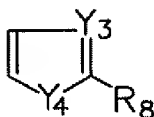


where ~~Y<sub>4</sub> is NR (where R is selected from the group consisting of hydrogen, a C<sub>1</sub> to C<sub>6</sub> alkyl, a C<sub>6</sub> to C<sub>12</sub> aryl, and 1-phenylsulfonyl), and R<sub>5</sub> and R<sub>6</sub> are independently selected from the group consisting of hydrogen, a C<sub>1</sub> to C<sub>6</sub> alkyl, a C<sub>1</sub> to C<sub>6</sub> alkoxy, a C<sub>2</sub> to C<sub>6</sub> alkenyl, a C<sub>6</sub> to C<sub>12</sub> aryl, and an acetyl;~~



(3)

where  $Y_2$  is selected from the group consisting of O, N, and S, and  $R_7$  is selected from the group consisting of hydrogen, a  $C_1$  to  $C_6$  alkyl, a  $C_1$  to  $C_6$  alkoxy, a  $C_2$  to  $C_6$  alkenyl, and a  $C_6$  to  $C_{12}$  aryl; and



(6)

where  $Y_3$  is selected from the group consisting of N, O, and S, and  $N-Y_4$  is  $NR'$  (where  $R'$  is selected from the group consisting of hydrogen, a  $C_1$  to  $C_6$  alkyl, O, and NH, and  $R_8$  is selected from the group consisting of hydrogen, a  $C_1$  to  $C_6$  alkyl, a  $C_1$  to  $C_6$  alkoxy, a  $C_2$  to  $C_6$  alkenyl, a  $C_6$  to  $C_{12}$  aryl, and an acetyl.

## 2. (PREVIOUSLY PRESENTED)

~~The non-aqueous electrolyte of a lithium~~

~~secondary battery according to claim 1, wherein the~~ A non-aqueous electrolyte of a lithium secondary battery, comprising:

a lithium salt;

an organic solvent; and

at least one ~~additive compound is at least one~~ selected from the group consisting of bisphenol A, 1-(phenylsulfonyl) pyrrole, 2,3-benzofuran, 2-butylbenzofuran, thianaphthene, and 2-methyl imidazole,

wherein the additive compound is used substantially in an amount of 0.01 to 10 wt%, based on a total weight of electrolyte.

## 3. (CANCELED)

## 4. (CURRENTLY AMENDED)

The non-aqueous electrolyte of a lithium secondary

battery according to claim 31, wherein the additive compound is used substantially in an amount of 0.01 to 5 wt%, based on a total weight of electrolyte.

## 5. (ORIGINAL)

The non-aqueous electrolyte of a lithium secondary battery

according to claim 4, wherein the additive compound is used substantially in an amount of 0.01 to 1 wt%, based on a total weight of electrolyte.

6. (ORIGINAL) The non-aqueous electrolyte of a lithium secondary battery according to claim 5, wherein the additive compound is used substantially in an amount of 0.01 to 0.5 wt%, based on a total weight of electrolyte.

7. (ORIGINAL) The non-aqueous electrolyte of a lithium secondary battery according to claim 1, wherein the additive compound forms a passivation layer on a surface of a positive electrode.

8. (ORIGINAL) The non-aqueous electrolyte of a lithium secondary battery according to claim 1, wherein the lithium salt is at least one selected from the group consisting of  $\text{LiPF}_6$ ,  $\text{LiBF}_4$ ,  $\text{LiSbF}_6$ ,  $\text{LiAsF}_6$ ,  $\text{LiClO}_4$ ,  $\text{LiCF}_3\text{SO}_3$ ,  $\text{Li}(\text{CF}_3\text{SO}_2)_2\text{N}$ ,  $\text{LiC}_4\text{F}_9\text{SO}_3$ ,  $\text{LiSbF}_6$ ,  $\text{LiAlO}_4$ ,  $\text{LiAlCl}_4$ ,  $\text{LiN}(\text{C}_x\text{F}_{2x+1}\text{SO}_2)(\text{C}_y\text{F}_{2y+1}\text{SO}_2)$  (wherein x and y are natural numbers),  $\text{LiCl}$ , and  $\text{LiI}$ .

9. (ORIGINAL) The non-aqueous electrolyte of a lithium secondary battery according to claim 8, wherein the lithium salt is used substantially at a concentration in the range of 0.6 to 2.0 M.

10. (PREVIOUSLY PRESENTED) The non-aqueous electrolyte of a lithium secondary battery according to claim 1, wherein the organic solvent is at least one non-aqueous organic solvent selected from the group consisting of a carbonate, an ester, an ether, and a ketone.

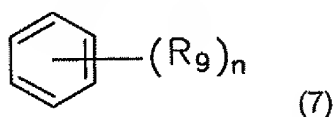
11. (ORIGINAL) The non-aqueous electrolyte of a lithium secondary battery according to claim 10, wherein the carbonate is selected from the group consisting of dimethyl carbonate (DMC), diethyl carbonate (DEC), dipropyl carbonate (DPC), methylpropyl carbonate (MPC), ethylpropyl carbonate (EPC), methylethyl carbonate (MEC), ethylene carbonate (EC), propylene carbonate (PC), and butylene carbonate (BC).

12. (ORIGINAL) The non-aqueous electrolyte of a lithium secondary battery according to claim 10, wherein the carbonate is a mixed solvent of a cyclic carbonate and a

chain carbonate.

13. (WITHDRAWN) The non-aqueous electrolyte of a lithium secondary battery according to claim 1, wherein the organic solvent comprises a mixed solvent of a carbonate solvent and an aromatic hydrocarbon solvent.

14. (WITHDRAWN) The non-aqueous electrolyte of a lithium secondary battery according to claim 13, wherein the aromatic hydrocarbon solvent is a compound of Formula (7):



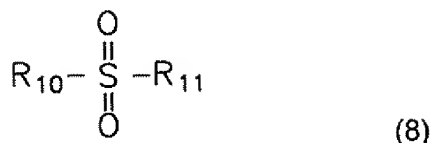
where  $R_9$  is selected from a group consisting of a halogen, and a  $C_1$  to  $C_{10}$  alkyl, and  $n$  is an integer of 1 to 6.

15. (WITHDRAWN) The non-aqueous electrolyte of a lithium secondary battery according to claim 13, wherein the aromatic hydrocarbon solvent is at least one selected from the group consisting of benzene, fluorobenzene, toluene, trifluorotoluene, xylene, and mixtures thereof.

16. (WITHDRAWN) The non-aqueous electrolyte of a lithium secondary battery according to claim 13, wherein the carbonate solvent and the aromatic hydrocarbon solvent are mixed in a volume ratio of 1:1 to 30:1.

17. (WITHDRAWN) The non-aqueous electrolyte of a lithium secondary battery according to claim 1, wherein the electrolyte further comprises an organic sulfone-based compound.

18. (WITHDRAWN) The non-aqueous electrolyte of a lithium secondary battery according to claim 17, wherein the organic sulfone-based compound is represented by the following formula (8):



where  $\text{R}_{10}$  and  $\text{R}_{11}$  are independently selected from the group consisting of a primary alkyl group, a secondary alkyl group, a tertiary alkyl group, an alkenyl group, a cycloalkyl group, an aryl group, or  $\text{R}_{10}$  and  $\text{R}_{11}$  are bound together to form a cyclic ring.

19. (WITHDRAWN) The non-aqueous electrolyte for a lithium secondary battery according to claim 18, wherein either of  $\text{R}_{10}$  or  $\text{R}_{11}$  is substantially vinyl.

20. (WITHDRAWN) The non-aqueous electrolyte for a lithium secondary battery according to claim 17, wherein the organic sulfone-based compound is used substantially in an amount of 0.01 to 5 wt% based on a total weight of electrolyte.

21. (PREVIOUSLY PRESENTED) A non-aqueous electrolyte of a lithium secondary battery, comprising:

a lithium salt; an organic solvent; and at least one additive compound selected from the group consisting of bisphenol A, 2-butylbenzofuran and thianaphthene, wherein the additive compound is used substantially in an amount of 0.01 to 10 wt%, based on a total weight of electrolyte.

22 - 48. (CANCELED)